Diethylhexyl Phthalate

CAS #117-81-7
Fischer 344 rats, at 0.0, 0.25, 0.50, 1.00% in feed
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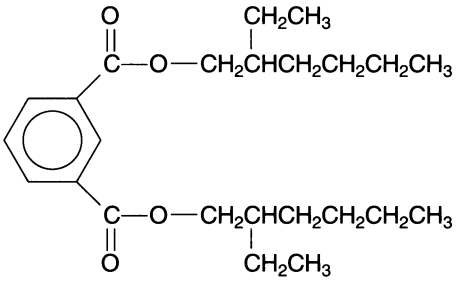
NTIS #PB87119046/AS



Diethylhexyl phthalate(DEHP), a widely used plasticizer, was tested to determine the effects of prenatal administration on reproduction and fertility in Fischer 344 rats (Lamb et al., Toxicol Appl Pharmacol 88:255–269 [1987]). The test DID NOT follow the standard RACB protocol. Instead, the F_1 generation was not dosed but only monitored by evaluation of selected developmental landmarks and locomotor activity at pre- and postweaning time points. This study was part of a test series of phthalate and congeners, evaluated for structure–activity correlations using either this or the standard RACB design. Exposure concentrations were set at 0.0, 0.25, 0.50, and 1.00% in feed. The high dose was the lowest dose that produced significant maternal and/or fetal toxicity or teratogenicity in pregnant Swiss CD-1 mice and/or their fetuses exposed to DEHP in the feed in a teratology study completed by Wolkowski-Tyl et al. (Teratology 27:84–85 [1983]). These concentrations produced calculated consumption estimates of 0, 164, 313, and 573 mg/kg/day.

Body weight was reduced by 25% for the high dose F_0 dams, though adjusted liver weight was unchanged. Feed consumption was reduced by 8 and 16% for the medium and high dose F_0 dams, respectively, although water consumption was unchanged. The only sign of reproductive toxicity was a 8% decrease in pup weight per litter for the high dose offspring.

No crossover test was conducted.

No reproductive effects were observed in the second generation. Neither F_0 nor F_1 males were evaluated at necropsy.

In summary, the only reproductive effect observed was a pup weight per litter decrease in the first generation.

Summary: NTP Reproductive Assessment by Continuous Breeding Study.

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Chemical: **Diethylhexyl Phthalate**
CAS#: **117-81-7**
Mode of exposure: **Feed**
Species/strain: **Rats, Fischer 344**

F_0 generation — Dose concentration →	0.25%	0.50%	1.00%
General toxicity	Male, female	Male, female	Male, female
Body weight	• , —	• , —	• , ↓
Liver weight[a]	• , —	• , —	• , —
Mortality	•	•	•
Feed consumption	• , —	• , ↓	• , ↓
Water consumption	• , —	• , —	• , —
Clinical signs	•	•	•
Reproductive toxicity			
x̄ litters/pair	—	—	—
# live pups/litter; pup wt./litter	— , —	— , —	— , ↓

Determination of affected sex (crossover)	Male	Female	Both
Dose level	•	•	•

F_1 generation — Dose concentration →	0.25%	0.50%	1.00%
General toxicity	Male, female	Male, female	Male, female
Mortality	•	•	•
Adult body weight	• , —	• , —	• , —
Clinical signs	•	•	•
Reproductive toxicity			
Fertility index	—	—	—
# live pups/litter; pup wt./litter	— , —	— , —	— , —

Summary information	
F_1 more sensitive than F_0?	No
Postnatal toxicity:	No

Legend: —, no change; •, no observation; ↑ or ↓, statistically significant change ($p<0.05$); — , —, no change in males or females. [a]Adjusted for body weight.